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GRADE A DRY MILK PRODUCTS. RECOMMENDED SANITATION ORDINANCE AND CODE FOR DRY MILK PRODUCTS USED IN GRADE A PASTEURIZED MILK PRODUCTS

Public Health Service
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GRADE A DRY MILK PRODUCTS

A Recommended Sanitation Ordinance and Code For

Dry Milk Products Used in Grade A Pasteurized Milk Products

1959 Edition

Supplement I to the Milk Ordinance and Code--

1953 Recommendations of the Public Health Service

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U. S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Public Health Service

Bureau of State Services
Division of Engineering Services
Milk and Food Program

PREFACE

These sanitation standards for the manufacture of dry milk products intended for use in the commercial preparation of Grade A pasteurized milk products have been developed as a supplement to the Milk Ordinance and Code--1953 Recommendations of the Public Health Service. Like the parent document, this supplement has the approval and endorsement of the U. S. Department of Agriculture and is recommended by the Public Health Service, U. S. Department of Health, Education, and Welfare, for voluntary adoption by States, counties, and municipalities.

Modern milk drying techniques have made possible the manufacture of high quality dry milk products suitable for use in the commercial preparation of milk products such as reconstituted milk, reconstituted skim milk, cultured buttermilk, flavored reconstituted dairy drinks, special dietary products containing added milk solids, and cottage cheese. In recent years, dry milk products have been utilized increasingly for this purpose, particularly in areas where seasonal or more persistent shortages of market milk occur. The National Conference on Interstate Milk Shipments, recognizing the need for such dry milk products to be of a sanitary quality comparable to that of Grade A market milk, requested the Public Health Service to cooperate with representatives of the Conference and the dry milk industry in drafting sanitary standards for the manufacture of Grade A dry milk products. The Service agreed to undertake the development of such standards.

The format and general requirements of the Milk Ordinance and Code have been followed closely. Deviations in content, for the most part, relate to practices which are specific to dry milk processing, and the recommended sanitation provisions contained in this supplement are based on the results of cooperative studies conducted by the Public Health Service, the Special Committee on Dry Milk of the National Conference on Interstate Milk Shipments, and the Grade A Advisory Committee of the American Dry Milk Institute. Grades other than Grade A are not specified since these standards are intended to cover the production of dry milk products which can be accepted by State and local regulatory agencies for use in the preparation of Grade A pasteurized milk products.

Organization of Supplement.

This publication, like the Milk Ordinance and Code, provides a model ordinance and detailed technical information to assist in the interpretation and application of its provisions. Part I is the adoption-by-reference form of the Ordinance Governing the Sanitary Quality of Dry Milk Products Used in the Commercial Preparation of Grade A Pasteurized Milk Products. Its use is recommended in localities where adoption of ordinances or regulations by reference to published standards is considered legal. The Council of State Governments has prepared a model law, "Milk and Food Codes Adoption-By-Reference Act," published in Suggested State Legislation Programs for 1950, which is recommended for enactment by States in order to enable communities

to adopt such ordinances by reference. Part II is the unabridged form of the Ordinance. It contains in full the provisions governing the production, packaging, and sale of dry milk products intended for use in the commercial preparation of Grade A pasteurized milk products. This form is suggested for enactment in jurisdictions where adoption-by-reference is not considered legal.

Part III is the Ordinance and Code. It repeats the Ordinance requirements as they appear in Part II, and contains additional technical and explanatory information to assist in their interpretation and application to specific situations. Public health reasons for the individual items were not included in the supplement since these appear in the Milk Ordinance and Code. It will be noted that Section 13 of the Ordinance specifies that it shall be enforced in accordance with the interpretations thereof contained in Part III. This supplement also includes as an appendix the specifications for U. S. Extra-Grade spray process products promulgated by the U. S. Department of Agriculture, and which are referred to in Section 3 of the Ordinance.

Acknowledgments.

Space does not permit acknowledgments by name of all individuals who have contributed to the development of this publication. Many helpful suggestions were received from State and local milk sanitation officials, members of industry, educational institutions, the Food and Drug Administration, the U. S. Department of Agriculture, and the Regional Milk and Food Consultants of the Public Health Service. Particular credit is due Dr. K. G. Weckel of the University of Wisconsin for direction of special studies on the sanitary aspects of milk drying operations; to Dr. O. W. Kaufman of Michigan State University for a critical appraisal of sanitation problems involved; to Mr. Leroy H. Houser of the Milk and Food Program, and Mr. Samuel M. Rogers and Mr. Harold Wainess formerly of the Milk and Food Program for technical assistance through extensive field investigations of milk drying operations; to the members of the two advisory committees for continued assistance throughout the development of this supplement; and to Mr. Harold B. Robinson and Mr. Harold E. Thompson, Jr. of the Milk and Food Program staff for preparation of this document.

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PART I

ADOPTION-BY-REFERENCE FORM OF ORDINANCE GOVERNING THE SANITARY QUALITY OF DRY MILK PRODUCTS USED IN THE COMMERCIAL PREPARATION OF GRADE A PASTEURIZED MILK PRODUCTS

(This short form is suggested for adoption by States, municipalities, counties, or health districts, subject to the approval of the appropriate legal authority. Its adoption will reduce the cost of publishing and printing, and will enable the dry milk ordinance to be kept up to date. The adoption of this short form is considered legal in many States. The Council of State Governments has prepared a model law, "Milk and Food Codes Adoption-by-Reference Act."[1/] It is recommended for enactment by States to enable communities to adopt certain ordinances by reference.)

An ordinance governing the production, manufacture, labeling, and sale of dry milk products for use in the commercial preparation of Grade A pasteurized milk products; this ordinance to supplement (cite ordinance adopting Milk Ordinance and Code--1953 Recommendations of the Public Health Service) and to be enforced in conjunction with and in addition thereto.

The municipality[2/] of _____ ordains:

SECTION 1. All dry milk products manufactured, sold, or offered for sale for use in the commercial preparation of Grade A pasteurized milk products regulated by (cite ordinance adopting Milk Ordinance and Code--1953 Recommendations of the Public Health Service), or used for such purpose within the municipality of _____ or its police jurisdiction, shall be regulated in accordance with the terms of the unabridged form of the Ordinance in GRADE A DRY MILK PRODUCTS--A Recommended Sanitation Ordinance and Code For Dry Milk Products Used in Grade A Pasteurized Milk Products--Supplement 1 to the Milk Ordinance and Code--1953 Recommendations of the Public Health Service, a certified copy[3/] of which shall be on file in the office of the _____: Provided, That the words "municipality of" in said unabridged form shall be understood to refer to the municipality of _____; and the words "health officer" shall be understood to refer to _____ of _____.

1/ A copy of the model act is included in Suggested State Legislation Programs for 1950, developed by the Council of State Governments.

2/ Substitute proper legal jurisdiction here and in all similar places throughout the ordinance.

3/ Certified copies of GRADE A DRY MILK PRODUCTS--A Recommended Sanitation Ordinance and Code For Dry Milk Products Used in Grade A Pasteurized Milk Products--Supplement 1 to the Milk Ordinance and Code--1953 Recommendations of the Public Health Service may be obtained for use as official copies upon request from the United States Public Health Service, Washington 25, D. C.

SECTION 2. Any person who shall violate any provision of this ordinance shall be fined not more than _____ 4/ at the discretion of the Court. Each and every violation of the provisions of this ordinance shall constitute a separate offense.

SECTION 3. All ordinances and parts of ordinances in conflict with this ordinance are hereby repealed; and this ordinance shall be in full force and effect immediately upon its adoption and publication, as provided by law.

4/ This section must be worded in accordance with community laws and the State constitution.

PART II

UNABRIDGED FORM OF ORDINANCE GOVERNING THE SANITARY QUALITY OF DRY MILK PRODUCTS USED IN THE COMMERCIAL PREPARATION OF GRADE A PASTEURIZED MILK PRODUCTS

(This unabridged form of the ordinance should be adopted where the short enabling form in Part I is not considered legal.)

An ordinance governing the production, manufacture, packaging, labeling, and sale of dry milk products for use in the commercial preparation of Grade A pasteurized milk products; this ordinance to supplement (cite ordinance adopting Milk Ordinance and Code--1953 Recommendations of the Public Health Service) and to be enforced in conjunction with and in addition thereto.

Be it ordained by the _____ of the municipality[5] of _____ as follows:

SECTION 1. DEFINITIONS.--The following definitions shall apply in the interpretation and the enforcement of this ordinance:

A. Milk.--Milk means the lacteal secretion, practically free from colostrum, obtained by the complete milking of one or more healthy cows, which contains not less than 3.25 percent milk solids-not-fat and not less than 3.25 percent milkfat.[6]

B. Milk Products.--Milk products mean and shall include skim milk, nonfat or defatted milk, cream, condensed or concentrated milk, and any fluid product made by the addition of any wholesome substance to milk or to any of these products.

C. Pasteurized Milk Products.--Pasteurized milk products mean commercially prepared Grade A pasteurized milk products regulated by (cite ordinance adopting Milk Ordinance and Code--1953 Recommendations of the Public Health Service).

D. Dry Milk Products.--Dry milk products mean products resulting from the drying of milk or milk products and any product resulting from the combination of dry milk products with other wholesome dry ingredients.

E. Grade A Dry Milk Products.--Grade A dry milk products mean dry milk products which comply with the applicable provisions of this ordinance.

5/ If adopting jurisdiction is not a municipality, substitute proper legal jurisdiction here and in all other places where the term appears throughout the ordinance.

6/ The milkfat and solids-not-fat standards should be changed, if necessary, to conform with the State law.

F. Milk Drying Plant.--Milk drying plant means a plant in which milk or milk products are dried, or in which milk or milk products are received, separated, concentrated or otherwise processed for drying.

G. Health Officer.--Health officer means the health authority of the municipality of _____ or an authorized representative thereof.1/

H. Person.--Person means any individual, partnership, corporation, company, firm, trustee, or association.

SEC. 2. MANUFACTURE AND SALE OF DRY MILK PRODUCTS.--No person shall produce, manufacture, sell or offer for sale in the municipality of _____ or its police jurisdiction any dry milk product intended for use in the commercial preparation of Grade A pasteurized milk products except Grade A dry milk products.

SEC. 3. PERMITS.--It shall be unlawful for any person to manufacture, sell or offer for sale in the municipality of _____ or its police jurisdiction any Grade A dry milk product for use in the commercial preparation of Grade A pasteurized milk products without a permit from the health officer. Only a person who complies with the requirements of this ordinance shall be entitled to receive and retain such a permit: Provided, That manufacture of dry milk products which do not meet the requirements of this ordinance for Grade A dry milk products and which are intended for other uses, shall not be construed to violate the terms of this ordinance, if such products are processed, packaged and stored separately and are plainly identified.

It shall be unlawful for any person to manufacture in a plant operating under a permit for Grade A dry milk products in the municipality of _____ or its police jurisdiction any dry milk product which does not meet the requirements of this ordinance for Grade A dry milk products without a permit from the health officer who shall require that such dry milk products be processed, packaged and stored separately from Grade A dry milk products, and that each package of such products be plainly marked in such manner as to prevent confusion of the product with Grade A dry milk products.

A permit for the manufacture of either Grade A dry milk products or dry milk products which do not meet the requirements of this ordinance for Grade A dry milk products may be temporarily suspended by the health officer upon violation by the holder of any of the applicable provisions of this ordinance, or may be revoked after a reasonable opportunity for a hearing by the health officer upon serious or repeated violations.

1/ If responsibility is to be vested in an agency other than the health agency, the proper authority should be substituted for the words "health officer" wherever the term appears in this ordinance. The authority responsible for the administration of this ordinance should be the same as that administering the Milk Ordinance and Code, to which this is a supplement.

SEC. 4. INSPECTION OF MILK DRYING PLANTS.--Upon application for a permit, the health officer shall inspect the milk drying plant with respect to which the permit is sought. If he is satisfied that the operation of the plant can comply with requirements of this ordinance, he shall issue a permit which shall not be transferable. If a permit is not issued, the health officer shall advise the applicant of the reasons therefor, and shall afford him an opportunity for a hearing before the health officer.

At least once every six months after the issuance of a permit, the health officer shall inspect all milk drying plants manufacturing dry milk products as defined herein within the municipality of _____ or its police jurisdiction. He shall notify the holder of the permit of any failure to comply with the provisions of this ordinance and, if a violation of Section 9 is involved, shall allow a reasonable period, but in no event less than 3 working days, to correct conditions; Provided, That the health officer may require the suspension of operations until corrective action has been taken if, in his judgment, continued operation of the plant will result in a serious threat to the public health. Upon the expiration of the period allowed, he shall reinspect the premises. Violation of the same requirement on such reinspection shall call for immediate suspension of permit and/or court action.

The health officer shall also make such other inspections and investigations as are necessary for the enforcement of this ordinance.

One copy of the inspection report shall be posted by the health officer in a conspicuous place upon an inside wall of the milk drying plant, and said inspection report shall not be defaced or removed by any person except the health officer. Another copy of the inspection report shall be filed with the records of the health department.

The holder of any permit under this ordinance shall keep accurate daily records of the actual quantities of dry milk products manufactured and sold, together with a list of all sources of milk or milk products from which such products were made, records of inspections and tests, and pasteurization time and temperature records. Such records shall be retained for a period of 12 months, and shall be available for examination in such establishment by the health officer during normal business hours.

The health officer shall upon request be afforded access to all parts of any milk drying plant holding a permit from the health officer of the municipality of _____ at any reasonable time, for the purpose of inspecting and investigating conditions relating to the enforcement of this ordinance.

It shall be unlawful for any person who in an official capacity obtains any information under this ordinance concerning any method or process or business operation which is entitled to protection as a trade secret to use such information to his own advantage or to reveal it to any person other than the health officer or as may be necessary for the enforcement of this ordinance.

SEC. 5. LABELING OF GRADE A DRY MILK PRODUCTS.--Grade A dry milk products shall be packaged in containers which are plainly and permanently labeled or marked with: (1) the common or usual name of the product and, if a mixture of two or more ingredients, the common or usual name of each ingredient; (2) the designation "Grade A"; (3) the identity of the plant in which the product was manufactured, either by name and address or by permit number and identity of the regulatory agency issuing such permit; and, in the latter case, the name and address of the distributor, qualified by an expression of connection with the product, such as "Distributed by _____ _____," shall also be shown; (4) a code or lot number identifying the contents with a specific date, run, or batch of the product; and (5) the quantity of the contents of the container.

Other information, such as a registered trademark design, may also be included, provided that it is not misleading and does not obscure any of the labeling required above.

SEC. 6. MILK AND MILK PRODUCTS USED IN THE MANUFACTURE OF GRADE A DRY MILK PRODUCTS.--Milk and milk products used in the manufacture of Grade A dry milk products shall comply with the requirements for Grade A Raw Milk for Pasteurization as provided in (cite ordinance adopting Milk Ordinance and Code--1953 Recommendations of the Public Health Service) and shall be produced under the routine supervision of the health officer, or produced under provisions which are substantially equivalent to the requirements of said ordinance, and which are enforced with equal effectiveness as determined by a milk sanitation rating.

SEC. 7. EXAMINATION OF DRY MILK PRODUCTS.--The health officer shall collect and examine at least one sample of each Grade A dry milk product being manufactured during each month. Samples of milk products resulting from processing for drying shall be taken and examined as often as the health officer may deem necessary. Bacteriological examinations shall be in accordance with the procedures of the (cite latest edition current at time ordinance is adopted) edition of Standard Methods for the Examination of Dairy Products recommended by the American Public Health Association.

SEC. 8. BACTERIOLOGICAL, CHEMICAL, AND PHYSICAL REQUIREMENTS FOR GRADE A DRY MILK PRODUCTS.--Grade A raw milk for pasteurization and Grade A raw milk products used for the manufacture of Grade A dry milk products shall at no time between receipt at the milk drying plant and pasteurization have a bacterial plate count or a direct microscopic clump count exceeding 400,000 per ml. After pasteurization such milk and milk products shall at no time have a bacterial plate count exceeding 30,000 per ml.: Provided, That the above limits shall be increased in the case of concentrated products in proportion to the degree of concentration.

Grade A dry milk products shall have at no time a bacterial plate count exceeding 30,000 per gram, or a coliform count exceeding 90 per gram; shall be free of unwholesome and deleterious materials and shall comply with

the chemical and physical requirements for U. S. Extra-Grade spray process products as promulgated by the U. S. Department of Agriculture and published in the FEDERAL REGISTER for August 5, 1954, and May 23, 1958.

SEC. 9. SANITATION REQUIREMENTS FOR MILK DRYING PLANTS.--Milk drying plants shall comply with the following items of sanitation:

Item 1. Floors.--The floors of all rooms in which milk or milk products are handled or stored, or in which milk utensils are washed, or in which dry milk products are handled, up to and including packaging, but not including rooms used only for storage of packaged dry milk products, shall be constructed of concrete, or other equally impervious and easily cleaned material, and shall be smooth, properly drained, provided with trapped drains, and kept clean and in good repair. Floors of storage rooms for packaged dry milk products shall be kept clean, dry and in good repair.

Item 2. Walls and Ceilings.--Walls and ceilings of rooms in which milk and milk products are handled or stored, or in which milk utensils are washed, or in which dry milk products are handled, up to and including packaging, but not including rooms used only for storage of packaged dry milk products, shall have a smooth, washable, light-colored surface, and shall be kept clean and in good repair. Walls and ceilings of storage rooms for packaged dry products shall be kept clean.

Item 3. Doors and Windows.--Unless other effective means are provided to prevent the access of flies, all openings to the outer air from rooms in which fluid milk and milk products are handled and stored, or in which milk utensils are washed, or in which dry milk products are processed or handled, up to and including packaging, but not including rooms used only for storage of packaged dry milk products, shall be effectively screened, and all doors shall be self-closing.

Item 4. Lighting and Ventilation.--All rooms shall be well lighted and well ventilated.

Item 5. Miscellaneous Protection from Contamination.--The various milk drying plant operations shall be so located and conducted as to prevent any contamination of milk, milk products, dry milk products, or clean equipment. All necessary means shall be used for the elimination of flies, other insects, and rodents. Cans of incoming milk or milk products shall not be unloaded directly into the processing rooms. Rooms in which milk, milk products, dry milk products, or unprotected clean containers are handled or stored shall not open directly into any stable or living quarters. The milk drying plant, milk containers, utensils and equipment shall be used for no purpose other than the processing of milk, milk products, or dry milk products, and the operations incident thereto, except as may be approved by the health officer.

Item 6. Toilet Facilities.--Every milk drying plant shall be provided with adequate and satisfactory flush-toilet facilities. Toilet rooms shall not open directly into any room in which milk, milk products, dry milk products,

equipment, or containers are handled or stored. The doors of all toilet rooms shall be self-closing, and open outward. Toilet rooms shall be kept in a clean condition, in good repair, and well ventilated. The text of Section 10 of these regulations and a notice directing employees to wash their hands before returning to work shall be posted in all toilet rooms used by employees.

Item 7. Water Supply.--The water supply shall be easily accessible, adequate, and of a safe, sanitary quality.

Item 8. Hand-washing Facilities.--Convenient hand-washing facilities shall be provided, including hot and cold running water, soap, approved sanitary towels, and suitable waste disposal facilities. Hand-washing facilities shall be kept clean. The use of a common towel is prohibited. No employee shall resume work after using the toilet room without having washed his hands.

Item 9. Sanitary Piping.--All piping, including fittings, used to conduct milk and milk products shall be constructed of smooth, impervious, noncorrodible and nontoxic materials; shall be so constructed as to permit proper cleaning; and shall be kept in good repair.

Item 10. Construction and Repair of Containers and Equipment.--All multiuse containers and equipment with which milk, milk products, or dry milk products come into contact shall be of smooth, impervious, noncorrodible, nontoxic material; shall be so constructed and so located as to be easily cleaned; and shall be kept in good repair. All single-service containers, gaskets, and other articles used shall have been manufactured, packaged, transported and handled in a sanitary manner.

Item 11. Disposal of Wastes.--All wastes shall be properly disposed of. All plumbing and equipment shall be so designed and so installed as to prevent contamination of processing equipment by backflow.

Item 12. Cleaning and Bactericidal Treatment of Containers and Equipment.--All milk and milk product containers and equipment, except single-service containers, shall be thoroughly cleaned after each use. Equipment comprising the drying system shall be cleaned more often if necessary to prevent contamination of the product. All multiuse containers shall be subjected effectively to a bactericidal process approved by the health officer after each cleaning, and all equipment immediately before each usage. When empty, and before being returned to a producer by a milk drying plant, each container shall be thoroughly cleaned and subjected to an effective bactericidal process approved by the health officer.

Item 13. Storage of Containers and Equipment.--After bactericidal treatment, all cans and other multiuse milk, milk products, or dry milk products containers and equipment shall be transported and stored in such a manner as to be protected from contamination.

Item 14. Handling of Containers and Equipment.--Between bactericidal treatment and use, and during periods of use, containers and equipment shall not be handled or operated in such a manner as to permit contamination of the milk, milk products, or dry milk products. No milk, milk products, or dry milk products shall be permitted to come into contact with equipment with which ungraded or a lower grade of milk, milk products, or dry milk products have been in contact, unless the equipment has first been thoroughly cleaned and effectively subjected to a bactericidal process approved by the health officer.

Item 15. Storage of Single-Service Containers and Materials.--Single-service containers and materials shall be purchased and stored only in sanitary packages; shall be kept therein in a clean, dry place above the floor until used; and shall be handled in a sanitary manner.

Item 16. Pasteurization.--Milk or milk products shall be pasteurized in the plant in which the milk or milk product is dried. Pasteurization shall be taken to refer to the process of heating every particle of milk or milk products (1) to at least 145° F., and holding it at such temperature continuously for at least 30 minutes, (2) to at least 161° F., and holding it at such temperature continuously for at least 15 seconds, or (3) to such other temperature, and holding it continuously at such temperature for such time as may be approved by the health officer. Pasteurization shall be performed only in equipment which is constructed and operated in a manner approved by the health officer.

Item 17. Cooling.--All milk received for drying, unless processed within 2 hours after receipt, shall be cooled immediately in approved equipment to 50° F. or less, and shall be maintained at that temperature until processed. Fluid milk products resulting from processing prior to drying shall, if stored, be cooled immediately to 50° F. or less and maintained thereat until processing is resumed.

Item 18. Packages and Packaging.--Dry milk products shall be packaged in new containers, which shall be sufficiently substantial to protect the contents from contamination. Packaging shall be done only at the place of manufacture and by methods approved by the health officer.

Item 19. Health of Personnel.--A physician authorized by the health officer shall take a careful morbidity history of each person connected with a milk drying plant or about to be employed by one, whose work will bring him into contact with the processing of milk, milk products or dry milk products or with unsealed containers or processing equipment. If examination or history should suggest that such person may be a carrier of, or infected with, the organisms of typhoid fever, paratyphoid fever, or any other communicable disease likely to be transmitted through milk, he shall secure appropriate specimens of body discharges and cause them to be examined in a laboratory approved by him or by the State health officer for such examinations, and, if the laboratory results so indicate, such person shall be barred from such employment.

Such person shall furnish such information, submit to such physical examinations, and provide such laboratory specimens as the health officer may require for the purpose of determining freedom from infection.

No person with an infected cut or lesion on hands or arms shall handle milk, milk products, dry milk products, or unsealed containers, or processing equipment.

Item 20. Cleanliness of Personnel.--All persons who come into contact with milk, milk products, dry milk products, unsealed containers, or processing equipment, shall wear clean outer garments, and shall keep their hands clean at all times, while engaged in such work.

Item 21. Vehicles.--Milk tank-cars and tank-trucks shall comply with the construction, cleaning, bactericidal treatment, storage, and handling requirements of Items 5, 10, 12, 13, and 14. While containing milk, cream, or milk products, they shall be sealed and labeled in a manner approved by the health officer. For each tank shipment, a bill of lading shall be prepared in triplicate, containing the identity of the product, the amount shipped, the grade, the receiving point, the shipping point, the shipper's name, the consignee's name, and whether the product is raw, pasteurized or otherwise heat treated. Bills of lading shall be kept on file by the shipper, the consignee, and the carrier for a period of 12 months for the information of the health officer.

SEC. 10. NOTIFICATION OF DISEASE.--No person with any disease in a communicable form, or who is a carrier of such disease, shall work in any milk drying plant in any capacity which brings him into contact with the production, handling, storage, or transportation of milk, milk products, unpackaged dry milk products, containers, or equipment; and no milk drying plant shall employ in any such capacity any such person, or any person suspected of having any disease in a communicable form or of being a carrier of such disease. Any processor of dry milk products in whose milk drying plant any communicable disease occurs, or who suspects that any employee has contracted any disease in a communicable form or has become a carrier of such disease, shall notify the health officer immediately.

SEC. 11. PROCEDURE WHEN INFECTION IS SUSPECTED.--When reasonable cause exists to suspect the possibility of transmission of infection from any person concerned with the handling of milk, milk products and dry milk products, the health officer is authorized to require any or all of the following measures: (1) the immediate exclusion of that person from handling milk, milk products and dry milk products; (2) the immediate exclusion of the milk, milk products and dry milk products concerned from distribution and use; and (3) adequate medical and bacteriological examination of the person, of his associates, and of his and their body discharges.

SEC. 12. DRY MILK PRODUCTS FROM POINTS BEYOND LIMITS OF ROUTINE INSPECTION.--Dry Milk products from points beyond the limits of routine inspection of the municipality of _____ may not

be sold or offered for sale for use in the commercial preparation of Grade A pasteurized milk products in the municipality of _____ or its police jurisdiction, unless produced under provisions which are substantially equivalent to the requirements of this ordinance, and which are enforced with equal effectiveness as determined by a milk sanitation rating.

SEC. 13. **ENFORCEMENT INTERPRETATION.**--This ordinance shall be enforced by the health officer in accordance with the interpretations thereof contained in Part III of GRADE A DRY MILK PRODUCTS--A Recommended Sanitation Ordinance and Code For Dry Milk Products Used in Grade A Pasteurized Milk Products--Supplement 1 to the Milk Ordinance and Code--1953 Recommendations of the Public Health Service, a certified copy8/ of which shall be on file in the office of _____, and in conjunction with (cite ordinance adopting Milk Ordinance and Code--1953 Recommendations of the Public Health Service).

SEC. 14. PENALTY.--Any person who shall violate any provision of this ordinance shall be fined not more than _____ at the discretion of the Court. Each and every violation of the provisions of this ordinance shall constitute a separate offense.9/

SEC. 15. REPEAL AND DATE OF EFFECT.--All ordinances and parts of ordinances in conflict with this ordinance are hereby repealed; and this ordinance shall be in full force and effect immediately upon its adoption and its publication, as provided by law.

SEC. 16. UNCONSTITUTIONALITY CLAUSE.--Should any section, paragraph, sentence, clause, or phrase of this ordinance be declared unconstitutional or invalid for any reason, the remainder of said ordinance shall not be affected thereby.

8/ See footnote 3, page 1.

9/ This section must be worded in accordance with community laws and the State constitution.

PART III

ORDINANCE AND CODE GOVERNING THE SANITARY QUALITY OF DRY MILK PRODUCTS USED IN THE COMMERCIAL PREPARATION OF GRADE A PASTEURIZED MILK PRODUCTS

(To be used in the interpretation of the ordinance as provided in Section 13.)

An ordinance governing the production, manufacture, packaging, labeling, and sale of dry milk products for use in the commercial preparation of Grade A pasteurized milk products; this ordinance to supplement (cite ordinance adopting Milk Ordinance and Code--1953 Recommendations of the Public Health Service) and to be enforced in conjunction with and in addition thereto.

Be it ordained by the _____ of the municipality[10] of _____ as follows:

SECTION 1. DEFINITIONS

The following definitions shall apply in the interpretation and the enforcement of this ordinance:

The definitions which follow serve to clarify the meaning of the defined terms as they appear in the ordinance or code. With the exception of milk, the definitions do not include chemical composition and, for this reason, are not composition standards. However, Section 8 of the ordinance requires that Grade A dry milk products comply with the chemical and physical requirements of the U. S. Department of Agriculture for U. S. Extra-Grade spray process products. These requirements may be found in the appendix. In addition, food products shipped interstate are subject to the Federal Food, Drug, and Cosmetic Act and must conform to the provisions of that Act and regulations promulgated thereunder.

A. Milk.--Milk means the lacteal secretion, practically free from colostrum, obtained by the complete milking of one or more healthy cows, which contains not less than 8.25 percent milk solids-not-fat and not less than 3.25 percent milkfat.[11]

B. Milk Products.--Milk products mean and shall include skim milk, nonfat or defatted milk, cream, condensed or concentrated milk, and any fluid product made by the addition of any wholesome substance to milk or to any of these products.

10/ See footnote 5, page 3.

11/ See footnote 6, page 3.

C. Pasteurized Milk Products.--Pasteurized milk products mean commercially prepared Grade A pasteurized milk products regulated by (cite ordinance adopting Milk Ordinance and Code--1953 Recommendations of the Public Health Service).

D. Dry Milk Products.--Dry milk products mean products resulting from the drying of milk or milk products and any product resulting from the combination of dry milk products with other wholesome dry ingredients.

E. Grade A Dry Milk Products.--Grade A dry milk products mean dry milk products which comply with the applicable provisions of this ordinance.

F. Milk Drying Plant.--Milk drying plant means a plant in which milk or milk products are dried, or in which milk or milk products are received, separated, concentrated or otherwise processed for drying.

G. Health Officer.--Health officer means the health authority of the municipality of _____ or an authorized representative thereof.12/

H. Person.--Person means any individual, partnership, corporation, company, firm, trustee, or association.

SECTION 2. MANUFACTURE AND SALE OF DRY MILK PRODUCTS

No person shall produce, manufacture, sell or offer for sale in the municipality of _____ or its police jurisdiction any dry milk product intended for use in the commercial preparation of Grade A pasteurized milk products except Grade A dry milk products.

Interpretation.--This section requires dry milk products to be Grade A if manufactured or sold for use in Grade A pasteurized milk products. It does not, however, prohibit manufacture or sale of other than Grade A dry milk products for other uses.

SECTION 3. PERMITS

It shall be unlawful for any person to manufacture, sell or offer for sale in the municipality of _____ or its police jurisdiction, any Grade A dry milk product for use in the commercial preparation of Grade A pasteurized milk products without a permit from the health officer. Only a person who complies with the requirements of this ordinance shall be entitled to receive and retain such a permit; Provided, That manufacture of dry milk products which do not meet the requirements of this ordinance for Grade A dry milk products and which are intended for other uses, shall not be construed to violate the terms of this ordinance, if such products are processed, packaged and stored separately and are plainly identified.

12/ See footnote 7, page 4.

It shall be unlawful for any person to manufacture in a plant operating under a permit to manufacture Grade A dry milk products in the municipality of _____ or its police jurisdiction, any dry milk product which does not meet the requirements of this ordinance for Grade A dry milk products without a permit from the health officer who shall require that such dry milk products be processed, packaged and stored separately from Grade A dry milk products, and that each package of such products be plainly marked in such manner as to prevent confusion of the product with Grade A dry milk products.

A permit for the manufacture of either Grade A dry milk products or dry milk products which do not meet the requirements of this ordinance for Grade A dry milk products may be temporarily suspended by the health officer upon violation by the holder of any of the applicable provisions of this ordinance, or may be revoked after a reasonable opportunity for a hearing by the health officer upon serious or repeated violations.

Interpretation.--A permit is required for the manufacture or sale of Grade A dry milk products intended for use in the commercial preparation of Grade A pasteurized milk products. While compliance with requirements for Grade A dry milk products is necessary to receive and retain such a permit, it is not the intent of the ordinance to limit the production of a milk drying plant to Grade A products.

The manufacture of ungraded products for other uses in plants operating under a permit for the manufacture of Grade A dry milk products is permitted under conditions whereby such products are processed, packaged, and stored separately. In such cases, a second permit is required which is issued with the understanding that ungraded products will be handled in such a manner as to avoid confusion with the Grade A production.

Either or both permits may be temporarily suspended for the violation of any applicable provision of the ordinance, or revoked for a serious or repeated violation. Suspension of permits for violation of sanitation items of Section 9 is provided for in Section 4. In addition, the health officer may, at any time, institute court action under the provisions of Section 14.

The ordinance provides no separate section dealing with the reinstatement of a permit. Accordingly, after revocation, the health officer should proceed on an application for reinstatement of permit on the same basis as for an original application.

There is no specified frequency for the issuance of permits. This should be in accordance with the policies of the enforcement agency and in agreement with those employed for the issuance of permits under the Milk Ordinance and Code to which this ordinance is a supplement.

SECTION 4. INSPECTION OF MILK DRYING PLANTS

Upon application for a permit, the health officer shall inspect the milk drying plant with respect to which the permit is sought. If he is satisfied that the operation of the plant can comply with requirements of this ordinance, he shall issue a permit which shall not be transferable. If a permit is not issued, the health officer shall advise the applicant of the reasons therefor, and shall afford him an opportunity for a hearing before the health officer.

At least once every six months after the issuance of a permit, the health officer shall inspect all milk drying plants manufacturing dry milk products as defined herein within the municipality of _____ or its police jurisdiction. He shall notify the holder of the permit of any failure to comply with the provisions of this ordinance and, if a violation of Section 9 is involved, shall allow a reasonable period, but in no event less than 3 working days, to correct conditions; Provided, That the health officer may require the suspension of operations until corrective action has been taken if, in his judgment, continued operation of the plant will result in a serious threat to the public health. Upon the expiration of the period allowed, he shall reinspect the premises. Violation of the same requirement on such reinspection shall call for immediate suspension of permit and/or court action.

The health officer shall also make such other inspections and investigations as are necessary for the enforcement of this ordinance.

One copy of the inspection report shall be posted by the health officer in a conspicuous place upon an inside wall of the milk drying plant, and said inspection report shall not be defaced or removed by any person except the health officer. Another copy of the inspection report shall be filed with the records of the health department.

The holder of any permit under this ordinance shall keep accurate daily records of the actual quantities of dry milk products manufactured and sold, together with a list of all sources of milk or milk products from which such products were made, records of inspections and tests, and pasteurization time and temperature records. Such records shall be retained for a period of 12 months, and shall be available for examination in such establishment by the health officer during normal business hours.

The health officer shall upon request be afforded access to all parts of any milk drying plant holding a permit from the health officer of the municipality of _____ at any reasonable time, for the purpose of inspecting and investigating conditions relating to the enforcement of this ordinance.

It shall be unlawful for any person who in an official capacity obtains any information under this ordinance concerning any method or process or business operation which is entitled to protection as a trade secret to use such information to his own advantage or to reveal it to any person other than the health officer or as may be necessary for the enforcement of this ordinance.

Interpretation.--An inspection of the milk drying plant is required before a permit is issued and at least once every six months thereafter. This should be regarded merely as the legal minimum, not as a desirable frequency. These inspections are not, however, required of sources of dry milk products from points beyond the limits of routine inspection when such sources fulfill the requirements of Section 12.

A permit holder found violating any requirement must be notified in writing, and must be given a reasonable period of time in which to correct the violation or violations before a reinspection is made. The requirement of giving written notice shall be deemed to have been satisfied by the posting of an inspection report as required by this section. After receipt of a notice of violation, but before the allotted time has elapsed, the holder of a permit has an opportunity to appeal to the health officer for an extension of the time allowed for correction.

The section also requires the holder of a permit to maintain records on the actual quantities of dry milk products manufactured and sold. In plants manufacturing more than one grade of product, this should include a notation as to whether such products are Grade A or ungraded. It is also required that accurate daily records be kept of all sources of milk and milk products from which dry milk products were made, and that records of inspections and tests required in the ordinance and code be maintained for a period of 12 months. The health officer is authorized to examine such records during normal business hours and to visit all parts of the milk drying plant for the purpose of inspection and investigation of conditions relating to the enforcement of this ordinance.

SECTION 5. LABELING OF GRADE A DRY MILK PRODUCTS

Grade A dry milk products shall be packaged in containers which are plainly and permanently labeled or marked with: (1) the common or usual name of the product and, if a mixture of two or more ingredients, the common or usual name of each ingredient; (2) the designation "Grade A"; (3) the identity of the plant in which the product was manufactured, either by name and address or by permit number and identity of the regulatory agency issuing such permit; and, in the latter case, the name and address of the distributor, qualified by an expression of connection with the product, such as "Distributed by _____," shall also be shown; (4) a code or lot number identifying the contents with a specific date, run, or batch of the product; and (5) the quantity of the contents of the container.

Other information, such as a registered trademark design, may also be included, provided that it is not misleading and does not obscure any of the labeling required above.

Interpretation.--The purpose of the section is to require labeling that will permit easy identification of the dry milk product and its origin. It is required that a product be designated by its common or usual name. Thus the product resulting from the drying of nonfat milk would be termed "nonfat dry milk." The ordinance permits the preparation of special use products containing other wholesome ingredients and this section requires that the name of each ingredient be declared on the label.

The identity of the milk drying plant in which the product was manufactured may be done either by simple statement of the name and address of the milk drying plant, or by stating on the label the permit number of the plant together with the name of the official agency that issued the permit. If the manufacturing plant is identified only by permit number and agency issuing the permit, it is then required that the name of the distributor be shown with a statement such as "Distributed by _____" in order that his connection with the product may be established.

This section permits the use of registered trademark designs or similar terms when, in the opinion of the health officer, such designs or terms are not misleading and are not so used to obscure the labeling required by the ordinance. The use of super grade designations such as Grade AA, Selected Grade A, Special Grade A, etc. are not permitted. However, this should not be construed as prohibiting the use of official grade designations awarded by the U. S. Department of Agriculture.

SECTION 6. MILK AND MILK PRODUCTS USED IN THE MANUFACTURE OF GRADE A DRY MILK PRODUCTS

Milk and milk products used in the manufacture of Grade A dry milk products shall comply with the requirements for Grade A Raw Milk for Pasteurization as provided in (cite ordinance adopting Milk Ordinance and Code--1953 Recommendations of the Public Health Service) and shall be produced under the routine supervision of the health officer, or produced under provisions which are substantially equivalent to the requirements of said ordinance, and which are enforced with equal effectiveness as determined by a milk sanitation rating.

Interpretation.--Detailed requirements for milk to be used in the manufacture of Grade A dry milk products are not included in the ordinance since they appear in the Milk Ordinance and Code--1953 Recommendations of the Public Health Service to which it is a supplement. The Milk Ordinance and Code also provides in Section II procedures which should be used when milk or milk products from outside the limits of routine inspection are to be used in the manufacture of Grade A dry milk products.

SECTION 7. EXAMINATION OF DRY MILK PRODUCTS

The health officer shall collect and examine at least one sample of each Grade A dry milk product being manufactured during each month. Samples of milk products resulting from processing for drying shall be taken and examined as often as the health officer may deem necessary. Bacteriological examinations shall be in accordance with the procedures in the (cite latest edition current at time ordinance is adopted) edition of Standard Methods for the Examination of Dairy Products recommended by the American Public Health Association.

SECTION 8. BACTERIOLOGICAL, CHEMICAL, AND PHYSICAL REQUIREMENTS FOR GRADE A DRY MILK PRODUCTS

Grade A raw milk for pasteurization and Grade A raw milk products used for the manufacture of Grade A dry milk products shall at no time between receipt at the milk drying plant and pasteurization have a bacterial plate count or a direct microscopic clump count exceeding 400,000 per ml. After pasteurization such milk and milk products shall at no time have a bacterial plate count exceeding 30,000 per ml.: Provided, That the above limits shall be increased in the case of concentrated products in proportion to the degree of concentration.

Grade A dry milk products shall have at no time a bacterial plate count exceeding 30,000 per gram, or a coliform count exceeding 90 per gram; shall be free of unwholesome and deleterious materials and shall comply with chemical and physical requirements for U. S. Extra-Grade spray process products as promulgated by the U. S. Department of Agriculture and published in the FEDERAL REGISTER for August 5, 1954, and May 23, 1958.

Interpretation.--This section prescribes the bacteriological, chemical, and physical requirements for Grade A dry milk products and the milk products from which they are manufactured. The bacteriological requirements are stated in the ordinance and the physical, chemical, flavor and odor requirements are those set forth by the U. S. Department of Agriculture for Extra-Grade products. Copies of these requirements for nonfat dry milk and dry whole milk, together with information as to the test methods to be utilized, are included in the appendix.

The bacterial standards for milk products which are used in the manufacture of Grade A dry milk products are the same as those contained in the Milk Ordinance and Code--1953 Recommendations of the Public Health Service for Grade A raw milk for pasteurization with an added proviso that the limits shall be increased in the case of concentrated products in proportion to the degree of concentration. Accordingly, the standard for a pasteurized nonfat milk which has been condensed to one third of its original volume for subsequent drying would be 90,000 per ml. rather than 30,000 per ml.

The criteria prescribed in the ordinance are the legal requirements for Grade A dry milk products. In the event dry milk products do not conform to these criteria, the health officer should require that the Grade A designation be removed, and is authorized, under Section 3 of the ordinance, to suspend a plant's permit for failure to do so. For this reason manufacturers of Grade A dry milk products are urged to conduct their own tests in order that the inconvenience of relabeling products which do not comply may be avoided.

SECTION 9. SANITATION REQUIREMENTS FOR MILK DRYING PLANTS

Milk drying plants shall comply with the following items of sanitation:

ITEM 1. FLOORS

The floors of all rooms in which milk or milk products are handled or stored, or in which milk utensils are washed, or in which dry milk products are handled, up to and including packaging, but not including rooms used only for storage of packaged dry milk products, shall be constructed of concrete, or other equally impervious and easily cleaned material, and shall be smooth, properly drained, provided with trapped drains, and kept clean and in good repair. Floors of storage rooms for packaged dry milk products shall be kept clean, dry and in good repair.

Satisfactory Compliance.--This item shall be deemed to have been satisfied when--

(1) The floors of all rooms in which milk or milk products are handled or stored, or in which milk utensils are washed, or in which unpackaged dry milk products are handled, are constructed of concrete of good quality, or of equally impervious tile or brick laid closely with impervious joint material, or of metal surfacing with impervious joints, or of other material which is the equivalent of concrete of good quality, and when such floors are maintained in good repair. (See Item 10 for floors of driers.)

(2) The floor surface is smooth, and, if subject to washing, it is so sloped that there will be no pools of standing water after flushing, and when the joints between the floor and the walls are so constructed as to be impervious.

(3) Floors subject to washing are provided with trapped drains, so constructed as to minimize clogging, and the plumbing is so installed that no sewage can back up into any drainline and flood the floor.

(4) All floors are kept clean at all times. Floors shall be washed or otherwise cleaned by dustless methods. Floors shall be kept free, not only of organic matter, but also of litter. Materials and equipment not routinely used in a given room shall not be stored therein, as this practice renders it difficult to keep floors clean. Materials and equipment not in routine use shall be stored in a separate storage room or rooms, on clean pallets, in clean bins or by other satisfactory methods, which permit easy access to all floor areas for cleaning.

ITEM 2. WALLS AND CEILINGS

Walls and ceilings of rooms in which milk and milk products are handled or stored, or in which milk utensils are washed, or in which dry milk products are handled, up to and including packaging, but not including rooms used only for storage of packaged dry milk products, shall have a smooth, washable, light-colored surface, and shall be kept clean and in good repair. Walls and ceilings of storage rooms for packaged dry products shall be kept clean.

Satisfactory Compliance.--This item shall be deemed to have been satisfied when--

(1) Walls and ceilings of processing rooms are finished with smooth washable tile, concrete, cement plaster, brick, or equivalent material, in good repair.

(2) Walls and ceilings of processing rooms present light-colored surfaces, and are refinished as often as the finish wears off or becomes discolored. A darker colored paint may be used for the lower part of the wall.

(3) Walls, ceilings, windows, and doors of all rooms are clean. (See Item 10 for requirements for walls of drying chambers.)

ITEM 3. DOORS AND WINDOWS

Unless other effective means are provided to prevent the access of flies, all openings to the outer air from rooms in which fluid milk and milk products are handled and stored, or in which milk utensils are washed, or in which dry milk products are processed or handled, up to and including packaging, but not including rooms used only for storage of packaged dry milk products, shall be effectively screened, and all doors shall be self-closing.

Satisfactory Compliance.--This item shall be deemed to have been satisfied when--

(1) All openings to the outer air are effectively screened; all screen doors and other doors, including interior doors, are self-closing; and all doors to the outer air open outward; or

(2) Fans of sufficient power to prevent the entrance of flies are in use at all ineffectively protected openings; or

(3) Effective electric screens or screen panels are installed at all openings to the outer air; or

(4) Any effective combination of (1), (2), and (3), above exists; or

(5) Flies are absent in the immediate vicinity of the plant.

Openings through which cans or other articles are loaded in rapid succession, making impracticable the proper use of self-closing screens, may be protected by properly constructed flaps, or by fans of sufficient power which are so located as to prevent the entrance of flies. Such fans shall be in operation at all times when doors are open.

Window and door screens shall be tight fitting and free of holes. This applies also to screens for skylights and transoms.

(Note: This item refers to the physical facilities for exclusion of flies from the interior of the plant, and shall be enforced during those seasons of the year when flies are present. The actual presence of flies inside the plant should be considered a violation of Item 5.)

ITEM 4. LIGHTING AND VENTILATION

All rooms shall be well lighted and well ventilated.

Satisfactory Compliance.--This item shall be deemed to have been satisfied when--

(1) Adequate light sources are provided (natural, artificial, or both) which furnish at least 20 foot-candles on all working surfaces, as measured by a light meter. This applies to all rooms where milk, milk products, or dry milk products are processed or where utensils and/or equipment are washed.

(2) All rooms are ventilated so as to be reasonably free of odors, and of condensation upon equipment, walls, and ceilings. Ventilation equipment, such as exhaust fans and vents, shall be provided to supplement windows and doors, if necessary.

(3) The above requirements shall not apply to cold-storage rooms, but dry-storage and cold-storage rooms should be provided with approximately 5 foot-candles of light at a distance of 30 inches from the floor.

ITEM 5. MISCELLANEOUS PROTECTION FROM CONTAMINATION

The various milk drying plant operations shall be so located and conducted as to prevent any contamination of milk, milk products, dry milk products, or clean equipment. All necessary means shall be used for the elimination of flies, other insects and rodents. Cans of incoming milk or milk products shall not be unloaded directly into the processing rooms. Rooms in which milk, milk products, dry milk products, or unprotected clean containers are handled or stored shall not open directly into any stable or living quarters. The milk drying plant, milk containers, utensils and equipment shall be used for no purpose other than the processing of milk, milk products, or dry milk products, and the operations incident thereto, except as may be approved by the health officer.

Satisfactory Compliance.--The following constitutes satisfactory compliance with this item:

(1) The plant, unless no milk and milk products are received in cans, shall contain separate rooms for (a) the receiving of milk and the cleaning of incoming milk or milk product containers, and (b) the processing and packaging operations. The storage of milk and milk products and subsequent processing, such as condensing, preheating, drying, and packaging, may be conducted in a single room, and the receiving and washing of incoming milk or milk products cans may also be conducted in a single room, but the two groupings of operations must be separated. All rooms shall be of sufficient size for their intended purpose.

(2) The room for receiving the incoming milk or milk products in cans shall contain receiving equipment from which the milk is conducted through sanitary pipe into the processing room or to storage. Can washers and enclosed milk clarifiers, separators, coolers, or storage tanks used exclusively for raw milk may be located in the receiving room, provided that there is no evidence of overcrowding.

(3) Cans of incoming milk or milk products shall be unloaded only in the receiving room.

(4) Rooms in which milk, milk products, dry milk products or unprotected cleaned utensils or containers are handled or stored shall not open directly into any stable or living quarters.

(5) Insecticides, rodenticides, or other effective means shall be employed to control insects and rodents effectively.13/ The immediate surroundings of the milk drying plant shall be kept in a neat, clean condition, free from fly-breeding areas and rodent harborages. Ratproof construction of all buildings is recommended.

(6) All equipment and containers with which milk, milk products, or dry milk products come into contact shall be covered, or otherwise protected, to prevent the access of flies, dust, condensation, and other contamination, during operation. (For protection during cooling, see Item 17; for protection during packaging, see Item 18.)

(7) Ingredients added to milk, milk products, or dry milk products, shall be handled in such a manner as to avoid contamination.

13/ For further information on insect control see Procedure For Insect Prevention and Control in Plants Processing Non-Fat Dry Milk Solids, prepared by the Stored-Product Insects Section, Biological Sciences Branch, Agricultural Marketing Service, U. S. Department of Agriculture.

(8) Receiving equipment shall be completely covered between bactericidal treatment and completion of receiving operations, except that when milk is being dumped therein or samples are being collected, openings of sufficient size for these purposes may be uncovered. Where strainers are used, the cover for the dump opening shall be so designed as to cover the opening with the strainer in place.

(9) All openings in covers of tanks, vats, separators, and similar equipment, shall be protected, by raised edges or otherwise, to prevent the entrance of surface drainage. Condensation-diverting aprons shall be provided, as close to the tank or vat as possible, on all pipes, thermometers, and other equipment extending into a milk-handling tank, bowl, or vat, unless a water-tight joint is provided. All surfaces coming into contact with dry milk products shall be properly enclosed.

(10) Condensed milk for drying shall not be strained or filtered, except through perforated metal or single-service materials. Air intakes for milk drying equipment shall be so located as to minimize the amount of atmospheric contamination, and shall be equipped with suitable air filters. (Sifters for dry milk products shall comply with Item 10.)

(11) Elevated platforms or mezzanine floors shall be so constructed as to prevent equipment, milk, or milk products on the lower floor from becoming contaminated by cleaning or other operations conducted on the upper floor.

(12) All food substances used in the preparation of dry milk products and all packaged dry milk products, shall be stored in a clean place, off the floor, and shall be so handled as to be protected from contamination.

(13) No other product shall be handled in the milk drying plant that may create a public health hazard. Permission to handle products other than those defined in Section 1, or to conduct operations in equipment or rooms other than those for which they are designed, should be provisional and subject to revocation if found objectionable.

(14) Poisonous substances, insecticides, and rodenticides shall be properly labeled, and shall be handled, stored and used in such a manner as not to create a public health hazard.

ITEM 6. TOILET FACILITIES

Every milk drying plant shall be provided with adequate and satisfactory flush-toilet facilities. Toilet rooms shall not open directly into any room in which milk, milk products, dry milk products, equipment, or containers are handled or stored. The doors of all toilet rooms shall be self-closing, and open outward. Toilet rooms shall be kept in a clean condition, in good repair, and well ventilated. The text of Section 10 and a notice directing employees to wash their hands before returning to work shall be posted in all toilet rooms used by employees.

Satisfactory Compliance.--The following constitutes satisfactory compliance with this item:

(1) Toilet facilities are provided which comply with the municipal or State plumbing code.

(2) The toilet room does not open directly into any room in which milk, milk products, dry milk products, ingredients, milk containers, or equipment are handled or stored. Entrance may be made through an intervening room, vestibule, or passageway equipped with two doors which are self-closing, tight fitting, and so spaced that both doors cannot be opened by one person at the same time. Such passageways shall be fully enclosed. A dressing room, if properly maintained, may be accepted in lieu of a vestibule. A booth which is open at the top or bottom shall not qualify as a toilet room.

(3) The toilet room and fixtures are kept clean, in good repair, and free from flies.

(4) The toilet room is well lighted, and is ventilated by openings to the outer air.

(5) The text of Section 10 of this ordinance and a notice directing employees to wash their hands before returning to work is posted in each toilet room used by employees. The posting may be accomplished by the use of one or more durable, legible, firmly attached placards, or by stenciling the material on a wall surface in a contrasting color.

(6) Private excreta disposal facilities are constructed and operated in accordance with the requirements of Item 10r and Appendix C of the Milk Ordinance and Code--1953 Recommendations of the Public Health Service.

ITEM 7. WATER SUPPLY

The water supply shall be easily accessible, adequate, and of a safe, sanitary quality.

Satisfactory Compliance.--The following constitutes satisfactory compliance with this item:

(1) The water supply is approved as safe by the State health officer, or the supply complies with the Public Health Service Drinking Water Standards. (Reprint 2697 from the Public Health Reports, March 15, 1946.)

(2) The source of supply complies with the applicable specifications contained in Item 11r and Appendix D of the Milk Ordinance and Code--1953 Recommendations of the Public Health Service.

(3) There is no connection between the safe water supply and any unsafe or questionable water supply, or any source of pollution through which it might be possible for the safe water supply to become contaminated. A direct connection, unprotected by approved airgap or backflow preventer, between the water supply piping and a make-up water tank (such as for cooling or condensing) constitutes a violation of this requirement.

(4) Condensing water for milk evaporators comes from a source complying with (1) and (2) above; Provided, That, when approved by the health officer, water from sources not complying with (1) and (2) above may be used if the evaporator is so constructed and controlled as to preclude contamination of the evaporator or its contents by condensing water. Suggested means of preventing such contamination are (1) use of a surface type condenser in which the condensing water is physically separated from the vapors and condensate or, (2) use of reliable safeguards to prevent the overflow of condensing water from the condenser into the evaporator in evaporators so constructed as to prevent the entrance of condensing water into the product by splash or entrainment. Such suggested safeguards include a barometric leg extending at least 35 feet vertically from the invert of the outgoing condensing water line to the free level at which the leg discharges, or a safety shutoff valve, located on the water feed line to the condenser, automatically actuated by a control which will shut off the inflowing water when the water level rises above a predetermined point in the condenser. This valve may be actuated by water, air, or electricity and should be so designed that failure of the primary motivating power will automatically stop the flow of water into the condenser.

(5) The quantity of the water is ample to insure proper cleaning of the plant and its equipment.

(6) All rooms of the plant in which milk, milk products, or dry milk products are handled, or in which containers are washed, are provided with an adequate number of water outlets.

(7) Samples are collected for bacteriological examination at not less than semiannual intervals, if the supply should be from a private source. In addition, samples for bacteriological examination are collected before use from all new, private sources of supply, and after disinfection from supplies contaminated by repair work. Bacteriological examination shall be made in conformity with the standard methods recommended by the American Public Health Association, and the quality of the water shall be deemed safe by the State health officer.

(Note: Frequently the bacteriological examination of a sample of water collected prior to disinfection of a well which has been recently constructed or repaired will show contamination. This is usually because surface contamination is carried into the ground water or well during construction or repair, and does not necessarily mean that the ground water was contaminated before the well was constructed or repaired. When a well is

properly located and constructed, the water usually will be bacteriologically satisfactory after the well has been completed and disinfected. Samples of newly developed wells, or of wells which have been repaired, should not be taken for bacteriological analysis until after completion and disinfection of the well.)

Bacteriological analyses show the presence or absence of contamination in the collected sample only. Therefore, they serve merely as an indication of the safety of the water supply at the time collected, and hence should be used only to supplement the information obtained from a sanitary survey of the water source, appurtenances, and surroundings. Sole reliance in determining the safety of water supplies cannot be placed on the results of infrequent bacteriological analyses; potentially hazardous supplies may be erroneously judged to be safe if contamination is not present at the time the samples are collected, even though there may be faulty location, construction, or operation of the supply.

A more detailed discussion of factors involved in the development, protection, and disinfection of safe water supplies may be found in Public Health Service Publication No. 24, Individual Water Supply Systems--Recommendations of the Joint Committee on Rural Sanitation, revised 1950.

ITEM 3. HAND-WASHING FACILITIES

Convenient hand-washing facilities shall be provided, including hot and cold running water, soap, approved sanitary towels, and suitable waste disposal facilities. Hand-washing facilities shall be kept clean. The use of a common towel is prohibited. No employee shall resume work after using the toilet room without having washed his hands.

Satisfactory Compliance.--The following constitutes satisfactory compliance with this item:

(1) Hand-washing facilities, including hot and cold running water, soap, and individual towels, are provided. The lavatory and appurtenances are kept clean, and suitable containers are provided for the disposal of used towels. Warm water may be accepted in lieu of hot and cold water. Any effective, sanitary means for drying the hands, in place of individual towels, are acceptable if approved by the health officer. Soap dispensers are recommended.

(2) Hand-washing facilities are located in or adjacent to all toilets, and convenient to all rooms in which milk drying plant operations are conducted.

(3) Hot and cold water are available at all times; however, warm water is an acceptable substitute. Water-mixing valves are recommended, but steam-mixing valves are not acceptable.

(4) Vats used for washing cans and equipment are not used as hand-washing facilities.

(5) No employee returns from a toilet to a room where milk, milk products, dry milk products, or milk utensils and equipment are handled, without having washed his hands.

ITEM 9. SANITARY PIPING

All piping, including fittings, used to conduct milk and milk products shall be constructed of smooth, impervious, noncorrodible and nontoxic materials; shall be so constructed as to permit proper cleaning; and shall be kept in good repair.

Satisfactory Compliance.--This item shall be deemed to have been satisfied when:

(1) All milk-contact surfaces of piping, fittings, and connections consist of smooth, impervious, noncorrodible and nontoxic material, and all joints are flush. The use of rubber and similar material is permitted only when other approved materials are impracticable for the prevention of leakage.

(2) The milk-contact surfaces of piping, fittings, and connections are so designed as to permit easy cleaning, are kept in good repair, are free of breaks or corroded places, and are so assembled as to be self-draining. Bent or dented milk piping shall be considered as violating this item.

(3) All connections, valves, fittings, and similar appurtenances are so designed that there are no sharp corners or crevices which are difficult to clean.

(4) All parts of interior surfaces of demountable piping and of fittings, including valves, and connections, are of such size and shape as to be accessible for inspection. Couplings or other types of fittings, the joints of which are not visible for inspection, shall be considered as violating this item. At least 1½-inch piping should be used, although in small installations, 1-inch sanitary piping may be used in straight lengths not exceeding 6 feet.

(5) Cleaned-in-place milk pipelines are self-draining, and (a) have joints provided with self-positioning, flexible gaskets of nontoxic low-absorption material, and of such design as to form a flush interior joint; or (b) have self-positioning joints of such design and finish as to form a smooth, flush interior; or (c) have all joints welded and smoothly polished on the interior face, and are provided, at all changes in direction, with welded crosses equipped with removable caps, or removable elbows, or welded elbows provided with inspection openings of adequate size. Return, recirculating lines when installed are of the same or equivalent material and construction as the milk line.

(Note: The above stipulations as to diameter of pipelines and joints between sections thereof are not applicable to the pipeline between the high pressure pump and the drier nozzle. Because of the high pressures required to obtain proper dispersal of the product in the drying chamber, these lines are of smaller diameter and are connected with pressure type, threaded fittings. (See subitem (3) of Item 12 regarding the cleaning of these lines.))

ITEM 10. CONSTRUCTION AND REPAIR OF CONTAINERS AND EQUIPMENT

All multiuse containers and equipment with which milk, milk products, or dry milk products come into contact shall be of smooth, impervious, noncorrodible, nontoxic material; shall be so constructed and so located as to be easily cleaned; and shall be kept in good repair. All single-service containers, gaskets, and other articles used shall have been manufactured, packaged, transported and handled in a sanitary manner.

Satisfactory Compliance.--The following constitutes satisfactory compliance with this item:

(1) All product-contact surfaces of multiuse containers and equipment consist of smooth, impervious, noncorrodible and nontoxic material. The use of rubber and similar materials should be permitted only where other approved materials are impracticable for preventing leakage. Cloth collector systems may be used on milk driers.

(2) All joints on milk or milk product equipment are welded or soldered flush with the surface, or otherwise fitted to avoid open seams; or the surface, if vitreous, is continuous. Joints on equipment coming into contact with dry products only may be sealed by other acceptable means. All joints shall be smooth. Tile floors with properly grouted joints are permitted in existing drier chambers. Where a rotating shaft is inserted through a surface with which milk and milk products come into contact, the joint between the moving and stationary surfaces must be close-fitting. Grease and oil from gears and bearings shall be kept out of the milk, milk products and dry milk products. Where a thermometer bulb is inserted through the surface with which milk or milk products come into contact, the bulb shall be provided with a pressure-tight seat ahead of all threads and crevices.

(3) All surfaces with which milk, milk products, or dry milk products come into contact, except pneumatic ducts and cyclonic or air-separator collectors, are easily accessible or demountable for cleaning. All surfaces are readily accessible for inspection. Surfaces coming into contact with milk or milk products shall have rounded corners and be self-draining. Agitators in milk tank-trucks and vats shall be easily removable. Wing nuts, bayonet locks, and similar devices should be used, whenever possible, in lieu of bolts and nuts, to promote easy disassembly.

(4) V-type threads are not normally in contact with milk, milk products, or dry milk products.

(5) All multiuse containers and other equipment are in good repair, and free from breaks, crevices, and corroded places. All milk cans and lids shall be in good repair at all times. Milk cans should have umbrella-type covers.

(6) Equipment is so located, with respect to walls and other equipment, as to provide adequate space for access to all surfaces for cleaning and servicing.

(7) The manufacture, packing, transportation, and handling of single-service containers, liners, gaskets, and similar articles must comply with requirements (a) through (d) which follow. Inspections and tests cited may be made by the health officer, or by any agency authorized by him.

(a) The buildings and rooms in which single-service articles are manufactured, packaged, stored, and handled shall be clean, well lighted, well ventilated, and free from dust, insects and rodents, as prescribed in Items 1 to 8, inclusive, and 11.

(b) All single-service articles shall be so processed, prior to use, that, in 3 out of 4 samples, product-contact surfaces of containers will have a residual bacterial plate count of not more than 1 per ml. of capacity, and other articles will have not more than 1 colony per square centimeter of surface area, as determined by the rinse or swab technique described in Standard Methods for the Examination of Dairy Products. No toxic substance shall be present in finished single-service articles.

(c) All operations at the fabrication plant and during transportation of the manufactured articles shall be so conducted as to reduce to a minimum the possibility of contaminating the manufactured articles. (See Items 13, 14, and 15.)

(d) All machinery and equipment parts with which the article being manufactured comes into contact shall be clean.

3-A Sanitary Standards - Health officers should accept new dairy equipment which complies with the 3-A Sanitary Standards promulgated jointly by the Sanitary Standards Subcommittee of the Dairy Industry Committee, the Committee on Sanitary Procedures of the International Association of Milk and Food Sanitarians, and the Milk and Food Program, Division of Engineering Services, Public Health Service, Department of Health, Education, and Welfare. Equipment manufactured in conformity with 3-A Sanitary Standards complies with the sanitary design and construction of this Ordinance and Code.

ITEM 11. DISPOSAL OF WASTES

All wastes shall be properly disposed of. All plumbing and equipment shall be so designed and so installed as to prevent contamination of processing equipment by backflow.

Satisfactory Compliance.--This item shall be deemed to have been satisfied when--

(1) All liquid wastes are disposed of in a public sewer.

(2) Where a public sewer is not available, all wastes are disposed of by methods which are not conducive to fly-breeding or other insanitary conditions, and which are approved by the State health officer.

(3) All plumbing and drainlines are so designed and so installed as to prevent contamination of milk equipment by back-flooding due to drain stoppage, and all overhead drains and piping shall be so installed that leakage and condensation are directed away from the milk, milk products, or dry milk products, and equipment and utensiis used in their handling.

(4) No trash or garbage is present upon the plant premises except in fully covered containers. Waste containers in the processing rooms, preferably, should have swing-top or pedal-operated covers.

ITEM 12. CLEANING AND BACTERICIDAL TREATMENT OF CONTAINERS AND EQUIPMENT

All milk and milk product containers and equipment, except single-service containers, shall be thoroughly cleaned after each use. Equipment comprising the drying system shall be cleaned more often if necessary to prevent contamination of the product. All multiuse containers shall be subjected effectively to a bactericidal process approved by the health officer after each cleaning, and all equipment immediately before each usage. When empty, and before being returned to a producer by a milk drying plant, each container shall be thoroughly cleaned and subjected to an effective bactericidal process approved by the health officer.

Satisfactory Compliance.--The following constitutes satisfactory compliance with this item:

(1) All multiuse containers and all milk and milk product equipment are thoroughly cleaned after each use, and demountable equipment is washed and stored in a clean place, off the floor. Surfaces that appear rough or greasy shall be considered not clean. All demountable equipment, except that which is effectively cleaned in place, shall be taken down after each usage for cleaning, including thermometer fittings where pressure-tight seats are not employed. As a supplement to routine cleaning with alkaline detergents, the alternate use of acid cleaners should be employed as frequently as necessary.

(2) All milk and milk product containers and equipment are given bactericidal treatment after each cleaning, especially just before the beginning of the day's operations, by one or a combination of the following methods:

(a) Exposure to steam for at least 15 minutes at a temperature of at least 170° F., or for at least 5 minutes at a temperature of at least 200° F., in a steam cabinet equipped with an indicating thermometer which is located in the coldest zone.

(b) Exposure to an enclosed jet of steam for not less than 1 minute.

(c) Immersion in hot water at a temperature of at least 170° F. for at least 2 minutes, or exposure to a flow of hot water at a temperature of at least 170° F. (at the outlet) for at least 5 minutes, as determined by use of a suitable thermometer.

(d) Exposure to hot air at a temperature of at least 180° F. for at least 20 minutes, in a properly designed oven or hot-air cabinet equipped with an indicating thermometer located in the coldest zone. Traces of moisture in cans or utensils which are inverted during heating will increase the bactericidal efficiency of hot-air cabinets. However, cans shall be thoroughly dried out during the heating process to prevent bacterial growth during subsequent storage.

(e) Immersion for at least 2 minutes in, or exposure for at least 2 minutes to a flow of, an approved chemical bactericide of approved strength. All milk contact surfaces must be wetted by the bactericidal solution, and piping so treated shall be filled. Bactericidal sprays may be used for large equipment. Bactericidal treatment with chemicals is not effective unless the surface has first been thoroughly cleaned. (See Appendix F, Milk Ordinance and Code--1953 Recommendations of the Public Health Service.)

(f) Producer's containers are given bactericidal treatment in automatic equipment so designed and operated as to produce containers having a bacterial content of not more than 1 per ml. of capacity.

Any completely enclosed equipment which is continuous with the pipe system and under pressure from the pipe system, such as preheaters, pumps, filters, valves, tubular holders, regenerator heater-coolers, clarifiers, and homogenizers, may be considered as having been adequately treated with steam, hot water, or chemicals, when proper temperatures or approved chemical solutions of proper strength are employed.

Covers and other closures, unions (except on cleaned-in-place lines), and similar parts should be slightly loosened to insure that all surfaces will be thoroughly treated, and to minimize expansion and contraction, cracks or strains.

When steam or hot water is used, coolers should be drained of refrigerant, or the refrigerant-intake valve should be closed and the return valve opened to provide for the expansion of the refrigerant.

Equipment not under pressure from the pipeline, or of which the entire surface is not reached, such as weigh vats, storage vats, preheaters, clarifiers, separators, processing vats, coolers, and cooler covers, either must be treated separately, or the parts not reached must be given supplementary treatment.

Bactericidal treatment is required of the entire assembled equipment immediately prior to the day's run. This may be done by means of steam, hot water, or chemical solution, as follows:

(a) When steam is used, each group of assembled piping shall be treated separately by inserting the steam hose into the inlet and maintaining steam flow from the outlet for at least 5 minutes after the temperature of the drainage at the outlet has reached 200° F. (The period of exposure required here is longer than that required for individual cans, etc., because of the heat lost through the large surface exposed to the air.) Covers must be in place during treatment.

(b) Hot water may be used by pumping it through the entire equipment. The temperature of the water at both the inlet and the outlet end of the assembly shall be at least 170° F. for at least 5 minutes. When the assembly is so long that it is difficult to obtain this temperature and time at the outlet end, the equipment should be treated in sections, or steam may be introduced at various points in the system in order to boost the temperature.

(c) When chlorine or another chemical solution is used, the solution appearing at the outlet end shall show the required strength. The chemical solution shall be pumped through the entire equipment for at least 2 minutes. Unions and other connectors should be slightly loosened to permit treatment of gaskets and threads, except on cleaned-in-place lines.

Here again, such surfaces as are not reached by the chemical solution shall be treated with steam as previously described, or the spray method of applying chemical solution may be used for such surfaces as are not reached by the flowing solution. Header ends and connecting piping of cabinet coolers should not be overlooked, as condensation from them may enter the collecting trough.

(3) The high-pressure line between the high-pressure pump and the spray nozzle and pipelines designed to be cleaned in place are subjected to a circulation-type cleaning and bactericidal treatment procedure approved by the health officer. Each cleaning circuit is equipped with a recording thermometer in the downstream end of the return line, of suitable range to record the time and temperature when the line is exposed to cleaning and bactericidal solutions. The thermometer charts shall be dated and kept on file for 12 months.

In considering individual installations for cleaned-in-place lines, the health officer should be guided by the "3-A Suggested Method for the Installation and Cleaning of Cleaned-in-Place Sanitary Milk Pipelines for Use in Milk and Milk Products Plants," formulated by the International Association of Milk and Food Sanitarians, Inc., the Public Health Service, and the Dairy Industry Committee. This method was published in the Journal of Milk and Food Technology, March-April 1953, Vol. 16, No. 2.

Higher temperatures and longer periods may be necessary for high-pressure lines. It has been demonstrated that alkaline cleaners at 190° F. for 1 hour, followed by an acid cleaner for 30 minutes at the same temperature, produce satisfactory results.

(4) Milk drying equipment is cleaned at intervals and by methods recommended by the manufacturer and approved by the health officer. Such methods may include cleaning without water by use of vacuum cleaners, brushes, or scrapers.14/ After cleaning, such equipment is given bactericidal treatment by a method approved by the health officer.

Studies have indicated that effective bactericidal treatment of the drier may be accomplished by the following procedure:

(a) Operate spray nozzles with water at temperature and rates at least as high as those employed during the drying operation.

(b) Adjust airflow to give at least 1/2-inch (water) pressure in the drying chamber.

(c) Continue operation for 20 minutes while a temperature of at least 185° F. is being registered at the air discharge from the drier.

Portions of the drying system not reached by this treatment or driers for which this procedure is not practical shall be treated by one of the methods prescribed in subitem (2) above, or by other methods of demonstrated effectiveness.

(5) After bactericidal treatment, cans shall have a residual bacterial plate count of not more than 1 per ml. of capacity, and milk and milk products equipment shall have not more than 100 bacteria per 8 square inches in 3 out of 4 swab samples collected and examined in accordance with the methods prescribed in Standard Methods for the Examination of Dairy Products, published by the American Public Health Association.

14/ Procedures which have been found to be effective are available for specific driers from the American Dry Milk Institute, 221 N. LaSalle Street, Chicago, Illinois.

In the case of milk drying equipment, organisms of the coliform group provide a better index of improper cleaning and bactericidal treatment. Swab samples from these surfaces shall be examined for the coliform group and shall not exceed 10 per 8 square inches in 3 out of 4 samples tested.

ITEM 13. STORAGE OF CONTAINERS AND EQUIPMENT

After bactericidal treatment, all cans and other multiuse milk, milk products, or dry milk products containers and equipment shall be transported and stored in such a manner as to be protected from contamination.

Satisfactory Compliance.--This item shall be deemed to have been satisfied when--

(1) All cans and other multiuse containers and equipment are transported and stored in clean crates or on racks in a clean place, and are protected from splash, flies, and dust. (For protection against overhead leakage and condensation, see Item 11.) Such containers as can practicably be inverted shall be stored in an inverted position. Storage racks shall be constructed of metal which is protected against rusting.

ITEM 14. HANDLING OF CONTAINERS AND EQUIPMENT

Between bactericidal treatment and use, and during periods of use, containers and equipment shall not be handled or operated in such a manner as to permit contamination of the milk, milk products, or dry milk products. No milk, milk products, or dry milk products shall be permitted to come into contact with equipment with which ungraded or a lower grade of milk, milk products, or dry milk products has been in contact, unless the equipment has first been thoroughly cleaned and effectively subjected to a bactericidal process approved by the health officer.

Satisfactory Compliance.--This item shall be deemed to have been satisfied when--

(1) The plant employees are seen to be using every reasonable precaution to prevent the product contact surfaces of containers and equipment from coming into contact with their persons and clothing after bactericidal treatment or while in use.

(2) Grade A milk, milk products, and dry milk products are not permitted to come into contact with ungraded or lower grade milk, milk products, or dry milk products, or with utensils or equipment which have been in contact with ungraded or a lower grade of milk, milk products, or dry milk products, unless such utensils and equipment have been thoroughly cleaned and effectively subjected to an approved bactericidal process. Carry-over of ungraded or lower grade of milk, milk products, or dry milk products to Grade A milk, milk products or dry milk products shall be avoided. When two grades of milk are received in the same plant in dual receiving equipment, a swing-type dump grill is not permitted.

ITEM 15. STORAGE OF SINGLE-SERVICE CONTAINERS AND MATERIALS

Single-service containers and materials shall be purchased and stored only in sanitary packages; shall be kept therein in a clean, dry place above the floor until used; and shall be handled in a sanitary manner.

Satisfactory Compliance.--This item shall be deemed to have been satisfied when--

(1) All single-service containers (liners) and materials are purchased only in sanitary packages, and are kept therein until used. Outer coverings shall be kept clean and free from insects.

(2) After removal from initial packages, single-service articles, including unfilled dry milk products packages, are so handled as to prevent their contamination.

ITEM 16. PASTEURIZATION

Milk or milk products shall be pasteurized in the plant in which the milk or milk product is dried. Pasteurization shall be taken to refer to the process of heating every particle of milk or milk products (1) to at least 145° F., and holding it at such temperature continuously for at least 30 minutes, (2) to at least 161° F., and holding it at such temperature continuously for at least 15 seconds or (3) to such other temperature, and holding it continuously at such temperature for such time as may be approved by the health officer. Pasteurization shall be performed only in equipment which is constructed and operated in a manner approved by the health officer.

Satisfactory Compliance.--This item shall be deemed to have been satisfied when--

(1) All dry milk products are manufactured from milk or milk products which have been pasteurized in the plant in which the milk or milk products are dried. Pasteurization of raw milk or milk products soon after receipt is recommended and, in all cases, should precede any process where the time and temperature are such that appreciable growth of microorganisms of public health significance might be expected to occur.

(2) The pasteurization process provides for the heating of milk or milk products (a) to at least 145° F., and holding at such temperature for a continuous period of at least 30 minutes, or (b) to at least 161° F., and holding at such temperature for a continuous period of at least 15 seconds, or (c) to such other temperature, and holding continuously at such temperature for such time as may be approved by the health officer. The pasteurization conditions described in (a) and (b) above are recognized as being adequate to protect the public health. However, other time-temperature combinations may be equally effective and may prove advantageous from a processing standpoint. For this reason, the health officer is authorized to approve other pasteurization times and temperatures if he is satisfied that they are equally effective for the destruction of microorganisms having public health significance.

(3) Pasteurization equipment, including control instruments, is designed and operated in compliance with the applicable requirements of Item 16p, Section 7, of the Milk Ordinance and Code--1953 Recommendations of the Public Health Service; Provided, That recording-thermometer charts shall be kept on file for 12 months as required by Section 4 of this ordinance.

ITEM 17. COOLING

All milk received for drying, unless processed within 2 hours after receipt, shall be cooled immediately in approved equipment to 50° F. or less, and shall be maintained at that temperature until processed. Fluid milk products resulting from processing prior to drying shall, if stored, be cooled immediately to 50° F. or less and maintained thereat until processing is resumed.

Satisfactory Compliance.--This item shall be deemed to have been satisfied when--

(1) All milk intended for drying, but not to be processed within 2 hours after receipt at the plant or receiving station, is cooled, immediately on receipt, to 50° F. or below, and is maintained thereat until processed.

(2) All milk products resulting from processing prior to drying are, if stored, cooled immediately to 50° F. or below, and are so maintained until further processed.

(3) Each storage tank in which milk or milk products are stored is equipped with an acceptable thermometer.

(4) If surface coolers are used, they shall meet the following specifications:

(a) The sections of open-surface coolers shall be so installed as to leave a gap of at least 1/4-inch between the header sections in order to permit easy cleaning, except when the gap is equal to, or greater than, the thickness of the header, lengthwise of the section.

(b) Where header ends are not completely enclosed within the cooler covers, condensation or leakage from the headers shall be prevented from entering the milk or milk product by so shaping the exposed header faces, above and below all gaps, as to direct condensation away from the tubes, and by using deflectors at the bottom of the headers, or by shortening the bottom trough, or by some other approved method.

(c) The supports of the cooler sections shall be so located as to prevent drip from them from reaching the milk or milk product.

(d) Recirculated water and liquid refrigerant which are used in coolers and regenerators shall be properly protected, and treated if necessary, because such water or refrigerant is often under greater pressure than the milk, and may, if impure, contaminate the latter when flaws develop in the joints or in the metal separating them.

(e) All open-surface coolers and open-surface regenerative coolers shall be provided with tight-fitting shields that protect the milk or milk product from possible contamination by flies, dust, drip, splash, manual contact, and droplets from coughs and sneezes. They should, preferably, be suspended on trolleys.

ITEM 18. PACKAGES AND PACKAGING

Dry milk products shall be packaged in new containers, which shall be sufficiently substantial to protect the contents from contamination. Packaging shall be done only at the place of manufacture and by methods approved by the health officer.

Satisfactory Compliance.--This item shall be deemed to have been satisfied when--

(1) All dry milk products are packaged in the final container at the plant where manufacture is performed.

(2) All packaging is done in a sanitary manner by methods which (a) protect the product from airborne contamination, (b) prevent manual contact with product-contact surfaces, and (c) eliminate manual contact with the product.

(3) Filled containers are closed immediately after being filled.

(4) All containers are new and sufficiently substantial to protect contents from impairment of quality with respect to sanitation, contamination, and moisture under customary conditions of handling, transportation, and storage.15/

ITEM 19. HEALTH OF PERSONNEL

A physician authorized by the health officer shall take a careful morbidity history of each person connected with a milk drying plant or about to be employed by one, whose work will bring him into contact with the processing of milk, milk products or dry milk products or with unsealed containers or processing equipment. If examination or history should suggest that such person may be a carrier of, or infected with, the organisms of typhoid fever, paratyphoid fever, or any other communicable disease likely

15/ Information on specific packaging materials may be obtained from the Packaging Committee of the American Dry Milk Institute, 221 N. LaSalle Street, Chicago, Illinois.

to be transmitted through milk, he shall secure appropriate specimens of body discharges and cause them to be examined in a laboratory approved by him or by the State health officers for such examinations, and, if the laboratory results so indicate, such person shall be barred from such employment.

Such person shall furnish such information, submit to such physical examinations, and provide such laboratory specimens as the health officer may require for the purpose of determining freedom from infection.

No person with an infected cut or lesion on hands or arms shall handle milk, milk products, dry milk products, or unsealed containers, or processing equipment.

Satisfactory Compliance.--The following constitutes satisfactory compliance with this item:

(1) Every employee of a milk drying plant who comes into contact with milk, milk products, dry milk products, unsealed containers, or processing equipment, and every person about to be so employed, is examined by a physician authorized by the health officer. This examination shall include a history and, when deemed to be necessary by the examining physician, clinical and laboratory examinations for typhoid fever, paratyphoid fever, diphtheria, and tuberculosis. Such examinations shall be considered to be necessary if the history should suggest the occurrence at any time of typhoid or paratyphoid fever, or recent infection with or exposure to any other communicable disease transmissible through milk.

(2) The following are barred from employment in a milk drying plant:

(a) A person who shows a positive or atypical Widal, and who has not been immunized against typhoid fever within 2 years; or a person who gives a history of typhoid fever, unless such person is willing to submit three sets (or more if required) of specimens of feces and urine for examination in a manner prescribed by the health officer, or any of whose said specimens prove positive; or

(b) A person who is found to harbor virulent diphtheria organisms; or

(c) A person who shows significant clinical or laboratory evidence of active tuberculosis.

(3) No person with a discharging wound, cut, or lesion on hands or arms, or one presumed to be infected, is permitted to handle milk, milk products, dry milk products, unsealed containers, or processing equipment.

ITEM 20. CLEANLINESS OF PERSONNEL

All persons who come into contact with milk, milk products, dry milk products, unsealed containers, or processing equipment, shall wear clean outer garments, and shall keep their hands clean at all times, while engaged in such work.

Satisfactory Compliance.--This item shall be deemed to have been satisfied when--

(1) The outer garments of all persons who come into contact with milk, milk products, dry milk products, unsealed containers or processing equipment are reasonably clean, and inside employees wear washable outer garments which are especially provided and which are used for no purpose other than milk plant duty.

(2) The hands of all such persons are clean.

(3) Specially provided clean boot covers and clean coveralls are worn whenever it is necessary to enter the drying chamber. Boot covers which have come into contact with areas other than those within the drier are not considered clean.

ITEM 21. VEHICLES

Milk tank-cars and tank-trucks shall comply with the construction, cleaning, bactericidal treatment, storage, and handling requirements of Items 5, 10, 12, 13, and 14. While containing milk or milk products, they shall be sealed and labeled in a manner approved by the health officer. For each tank shipment, a bill of lading shall be prepared in triplicate, containing the identity of the product, the amount shipped, the grade, the receiving point, the shipping point, the shipper's name, the consignee's name, and whether the product is raw, pasteurized or otherwise heat treated. Bills of lading shall be kept on file by the shipper, the consignee, and the carrier for a period of 12 months for the information of the health officer.

Satisfactory Compliance.--The following constitutes satisfactory compliance with this item:

(1) The operation of milk tank-cars, tank-trucks, and shipping vats are subject to the following provisions:

(a) Milk and milk products shall be conducted to and from tanks only through sanitary piping, or flexible piping approved by the health officer. Such piping shall be capped when not in use.

(b) Inlets and outlets of transportation tanks shall be provided with tight-fitting dust caps or covers.

(c) Facilities shall be provided for adequate washing and bactericidal treatment of tanks, piping, and accessories at all plants receiving or shipping milk or milk products in tanks.

(d) Transportation tanks and/or compartments thereof shall be cleaned at the receiving plant immediately after being emptied. The cleaned tanks shall be given bactericidal treatment at the shipping plant before loading. (However, tank-trucks which must make more than one trip while unloading a tank-car need not be cleaned and given bactericidal treatment after each trip.)

(e) Piping, connections, and pumps, used with tanks, shall be cleaned and given bactericidal treatment after each use.

(f) The covers of all tank openings of tank-trucks, and the doors of tank-cars, shall be sealed with a wire and lead seal immediately after loading. The seal shall remain unbroken until the contents are delivered to the consignee.

(g) Contents of tanks shall be labeled, as prescribed in Section 5, by means of a tag attached to the outlet.

(h) Each consignee's copy of the bill of lading shall accompany each tank shipment of milk, or milk products, and shall state the amount of milk or milk product shipped, the grade, the receiving point, the shipping point, the shipper's name, the consignee's name, and whether the contents are raw, pasteurized, or otherwise heat treated. Bills of lading shall be available for the information of the health officer for a period of 12 months.

(Note: For compliance with applicable requirements for construction, cleaning, bactericidal treatment, storage, and handling of milk tank-cars, tank-trucks, and shipping vats, as well as piping, connections and pumps used therewith, see Items 5, 10, 12, 13, and 14.)

SECTION 10. NOTIFICATION OF DISEASE

No person with any disease in a communicable form, or who is a carrier of such disease, shall work in any milk drying plant in any capacity which brings him into contact with the production, handling, storage, or transportation of milk, milk products, unpackaged dry milk products, containers, or equipment; and no milk drying plant shall employ in any such capacity any such person, or any person suspected of having any disease in a communicable form or of being a carrier of such disease. Any processor of dry milk products in whose milk drying plant any communicable disease occurs, or who suspects that any employee has contracted any disease in a communicable form or has become a carrier of such disease, shall notify the health officer immediately.

SECTION 11. PROCEDURE WHEN INFECTION IS SUSPECTED

When reasonable cause exists to suspect the possibility of transmission of infection from any person concerned with the handling of milk, milk products and dry milk products, the health officer is authorized to require any or all of the following measures: (1) The immediate exclusion of that person from handling milk, milk products and dry milk products; (2) the immediate exclusion of the milk, milk products and dry milk products concerned from distribution and use; and (3) adequate medical and bacteriological examination of the person, of his associates, and of his and their body discharges.

SECTION 12. DRY MILK PRODUCTS FROM POINTS BEYOND LIMITS OF ROUTINE INSPECTION

Dry milk products from points beyond the limits of routine inspection of the municipality of _____ may not be sold or offered for sale for use in the commercial preparation of Grade A pasteurized milk products in the municipality of _____ or its police jurisdiction, unless produced under provisions which are substantially equivalent to the requirements of this ordinance, and which are enforced with equal effectiveness as determined by a milk sanitation rating.

Interpretation.--This section is intended to permit the health officer to bar dry milk products shipped in from beyond the limits of normal inspection, unless he can assure himself that they meet the provisions of this ordinance. Subject to laboratory tests upon arrival, the health officer should approve, without his inspection, supplies of dry milk products from any area or shipper not under his routine inspection when (1) they are produced and processed under regulations substantially equivalent to those of this ordinance, (2) they are under routine official supervision, and (3) they have been awarded, by the milk sanitation rating authority of the State of origin, a milk sanitation rating equal to that of the local supply or, if lower than that of the local supply, equal to 90 percent or more, on the basis of the Public Health Service rating method.

SECTION 13. ENFORCEMENT INTERPRETATION

This ordinance shall be enforced by the health officer in accordance with the interpretations thereof contained in Part III of GRADE A DRY MILK PRODUCTS--A Recommended Sanitation Ordinance and Code For Dry Milk Products Used in Grade A Pasteurized Milk Products--Supplement 1 to the Milk Ordinance and Code--1953 Recommendations of the Public Health Service, a certified copy16/ of which shall be on file in the office of _____, and in conjunction with (cite ordinance adopting Milk Ordinance and Code--1953 Recommendations of the Public Health Service.)

16/ See footnote 3, page 1.

SECTION 14. PENALTY

Any person who shall violate any provision of this ordinance shall be fined not more than _____ at the discretion of the Court. Each and every violation of the provisions of this ordinance shall constitute a separate offense.17/

SECTION 15. REPEAL AND DATE OF EFFECT

All ordinances and parts of ordinances in conflict with this ordinance are hereby repealed; and this ordinance shall be in full force and effect immediately upon its adoption and its publication, as provided by law.

SECTION 16. UNCONSTITUTIONALITY CLAUSE

Should any section, paragraph, sentence, clause, or phrase of this ordinance be declared unconstitutional or invalid for any reason, the remainder of said ordinance shall not be affected thereby.

17/ See footnote 9, page 11.

PART IV

APPENDIXES TO ORDINANCE AND CODE GOVERNING THE SANITARY QUALITY OF DRY MILK PRODUCTS USED IN THE COMMERCIAL PREPARATION OF GRADE A PASTEURIZED MILK PRODUCTS

The Ordinance Governing the Sanitary Quality of Dry Milk Products Used in the Commercial Preparation of Grade A Pasteurized Milk Products (Part II of this publication) requires in Section 8 that Grade A dry milk products produced in accordance with the terms of this Ordinance shall also comply with chemical and physical requirements of the U. S. Department of Agriculture for U. S. Extra-Grade spray process products. These requirements as published in the FEDERAL REGISTER for August 5, 1954, and May 23, 1958, are reproduced in these appendixes for the convenience of the reader.

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APPENDIX A. United States Standards for Grades of Dry Whole Milk

U. S. Extra Grade - Spray Process. Dry whole milk manufactured by the spray process conforms to the following requirements:

(1) Flavor and odor (applies equally to the reliquefied form). It may have definite cooked flavors and odors and other off-flavors to a slight degree but is free from objectionable flavors and odors.

(2) Physical appearance. Is white or light cream color; free from lumps that do not break up under moderate pressure; and practically free from brown and black scorched particles.

(3) Bacterial estimate.[18/] Not more than 50,000 per gram.

(4) Butterfat content. Not less than 26.0 percent.

(5) Coliform estimate.[18/] No requirement.

(6) Copper content.[19/] Not more than 1.5 p.p.m.

(7) Iron content.[19/] Not more than 10 p.p.m.

(8) Moisture content. Not more than 2.5 percent.

(9) Oxygen content. If gas packed, not more than 3 percent.

(10) Scorched particle content. Not more than 15.0 mg.

(11) Solubility index. Not more than 0.50 ml.

(12) Titratable acidity. Not more than 0.15 percent.

Test methods for determining compliance with these specifications are available from the Grading and Inspection Laboratory, Agricultural Marketing Service, U. S. Department of Agriculture, 1819 West Pershing Road, Chicago, Illinois.

18/ Do not apply as these requirements are superseded by the requirements of Section 8 for Grade A dry milk products.

19/ This test is not required if equipment surfaces coming in contact with milk are free of copper, iron, or copper alloys.

APPENDIX B. United States Standards for Grades of Nonfat Dry Milk (Spray Process)

U. S. Extra. U. S. Extra Grade shall conform to the following requirements:

(1) Flavor and odor (applies to the reliquefied form). Shall be sweet, pleasing and desirable but may possess the following flavors to a slight degree: chalky, cooked, feed and flat.

(2) Physical appearance. Shall possess a uniform white to light cream natural color; free from lumps except those that readily break up with very slight pressure, and practically free from visible dark particles. The reliquefied product shall be free from graininess.

(3) Laboratory tests. Shall be used to determine classification of the following characteristics:

(i) Bacterial estimate.[20/] Not more than 50,000 per gram standard plate count.

(ii) Butterfat content. Not more than 1.25 percent.

(iii) Moisture content. Not more than 4.0 percent.

(iv) Scorched particle content. Not more than 15.0 mg.

(v) Solubility index. Not more than 1.2 ml.

(vi) Titratable acidity. Not more than 0.15 percent.

Test methods for determining compliance with these specifications are available from the Grading and Inspection Laboratory, Agricultural Marketing Service, U. S. Department of Agriculture, 1819 West Pershing Road, Chicago, Illinois.

20/ Does not apply as this requirement is superseded by the requirements of Section 8 for Grade A dry milk products.